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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,307	12/04/2003	Lapchuk Anatoliy	4611-031	9594

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EXAMINER

CHOW, LIXI

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/728,307

Applicant(s)

ANATOLIY ET AL.

Examiner

Lixi Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10 and 21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 10 and 21 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-8, 10 and 21 are pending in this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 3 recites, "a portion of the conductive layer is removed by scanning a focused ion beam on the conductive layer to form the thin metal layers"; however, Examiner notices that at least two portions of conductive layer have to be removed in order to form thin metal layers. Accordingly, the subject matter in claim 3 is indefinite.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Moreland et al. (USP 2003/0155934; hereafter Moreland).

Regarding claim 1:

Moreland discloses an optical fiber probe comprising:

a near-field probe having a core transmitting light incident from an external light source and having a circular cone structure formed on an end of the core, and a cladding coated on a surface of the circular cone structure core to protect the core (see Figs. 7B and 10A, paragraphs [0015]-[0018]); and

a plurality of thin metal layers coated on the near-field probe, symmetrically disposed on opposite sides of the near-field probe, and spaced-apart from each other to generate an electrical potential difference (see Fig. 7B and Fig. 10A, the hatched areas corresponds to a plurality of thin metal layers).

Regarding claim 2:

Moreland discloses the optical fiber probe of claim 1, wherein the thin metal layers is made of aluminum (see paragraph [0018]).

Regarding claim 3:

Moreland discloses the optical fiber probe of claim 1, wherein the near-field probe is formed with a conductive layer coated thereon, and a portion of the conductive layer is removed by scanning a focused ion beam on the conductive layer to form the thin metal layers (see paragraph [0034]).

Regarding claim 4:

Moreland discloses the optical fiber probe of claim 1, wherein the electrical potential difference is generated between the thin metal layers to allow light to pass through the near-field probe (see paragraphs [0016] and [0083]).

Regarding claim 5:

Moreland discloses the optical fiber probe of claim 1, wherein the thin metal layers are spaced-apart from each other by a distance according to at least one of a wavelength of light incident to the near-field probe and a characteristic of a material forming the thin metal layers (see paragraph [0086]).

6. Claims 8, 10 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kiguchi et al. (USP 2003/0015651; hereafter Kiguchi).

Regarding claim 8:

Kiguchi discloses an optical recording apparatus (see Fig. 2) comprising:

a laser diode generating light (Fig. 2, element 205);

an optical disc storing data using an optical signal (Fig. 2, element 203);

an optical fiber transmitting the light emitted from the laser diode (see paragraph [0059]);

a near-field probe scanning laser beam on a recording medium by transmitting the light, which is incident from the laser diode, using a voltage potential difference therebetween (see paragraph [0060]); and

a lens (Fig. 2, element 210) condensing the light emitted from the laser diode to scan the light on the recording medium using the optical fiber; wherein the near-field probe comprises a plurality of metal layers coated on opposite sides thereof and symmetrically spaced-apart from each other to generate an electrical potential difference (see Figs. 3B and 4).

Regarding claim 10:

Kiguchi discloses an optical fiber probe of claim 8, wherein the near-field probe comprises an opening formed on a distal end thereof, and the electrical potential difference

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increases a light transmission rate of the opening (see paragraph [0060]; Kiguichi suggests that the gap may be provided at the tip of the probe).

Regarding claim 21:

Kiguichi discloses a method used with an optical recording and/or reproducing apparatus, the method comprising:

generating light from a light source (see Fig. 2, element 205);

transmitting the light through an optical fiber having a core and a cladding coated on a surface of the core to protect the core (see paragraph [0059]);

transmitting the light toward a recording medium through a near-field probe formed on one end of the optical fiber (see Fig. 2); and

generating an electrical potential difference using a plurality of metal layers formed on the near-field probe and spaced-apart from each other by a distance (see Fig. 3B).

Allowable Subject Matter

7. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regards to claims 6 and 7, none of the reference of record alone or in combination disclose or suggest an optical fiber probe, wherein at least one of the thin metal layers comprises sides forming an angle of 60/90 degree with respect to an center of the near-field probe when the wavelength of the light is 400/650nm, and the material is aluminum/silver.

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Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al. (USP 2003/0184328) is cited, because Lee et al. show a near-field probe having conductive materials formed on both sides of the probe.


Nakajima et al. (USP 2003/0085351) and Kopelman et al. (US 5,627,933) are cited, because they both teach an optical fiber probe having metal formed on the tapered portion of the probe.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lixi Chow whose telephone number is 571-272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LC 2/1/07


THANG V. TRAN
PRIMARY EXAMINER